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U.S. Bureau of Manpower Utilization

Occupational analysis publications, July 1945

Washington, D.C.

[1945]

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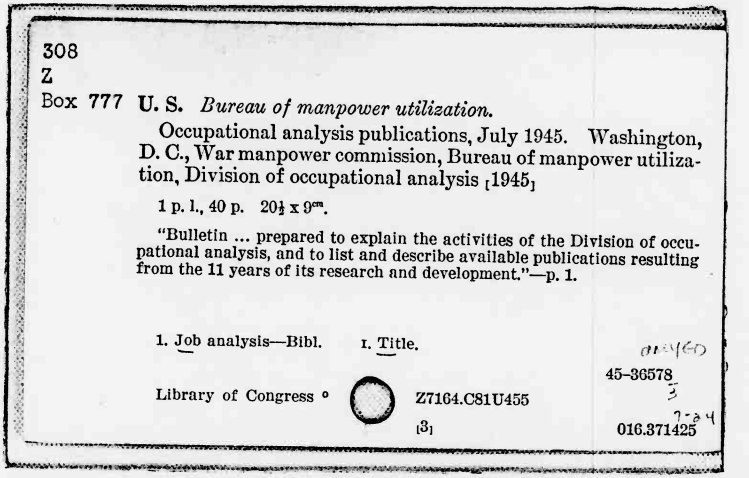

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Occupational analysis publications, July 1945. Washington, D. C., War manpower commission, Bureau of manpower utilization, Division of occupational analysis [1945]

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OCCUPATIONAL ANALYSIS PUBLICATIONS

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WAR MANPOWER COMMISSION
BUREAU OF
MANPOWER UTILIZATION
DIVISION OF
OCCUPATIONAL ANALYSIS
Washington, D. C.

OCCUPATIONAL ANALYSIS PUBLICATIONS

This bulletin has been prepared to explain the activities of the Division of Occupational Analysis, and to list and describe available publications resulting from the 11 years of its research and development. The bulletin is organized in three parts which report the activities of the Division; list and describe publications on sale through the Superintendent of Documents, United States Government Printing Office; and similarly describe publications which, for the present, can be distributed in limited quantities, without charge, by local offices of the United States Employment Service or by the Division of Occupational Analysis.

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PART I

Origin and Purpose

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In June of 1933, the Seventy-third Congress passed the Wagner-Peyser Act, revitalizing the United States Employment Service. The major function of the new Service was to develop a Nation-wide system of employment offices; and chief among the obstacles confronting the administrators of such a system was the incomplete and disorganized nature of available information about the tasks that workers actually performed. Equally vexing was the need for techniques for selecting workers qualified to carry on or to learn readily specific jobs in which manpower was needed.

Hence, when the Secretary of Labor began, in 1934, the organization of a systematic program of occupational research, that move won

considerable support. Financial assistance was forthcoming through endowments from the Spelman Fund and the Carnegie Corporation. These funds, together with a Federal appropriation, were used to establish the Occupational Research Program of the United States Employment Service under the direction of William H. Stead. The Technical Advisory Board, formed at that time, is still functioning with some changes in personnel, to advise and assist in coordinating occupational analysis activities with trends in industry, education, and related activities.

Thus was the stage set for the application of scientific methods to the task of matching men and jobs.

ELEVEN YEARS OF DEVELOPMENT

Five phases mark the development of the Occupational Research Program into the Division of Occupational Analysis.

The first year of ORP, as the early program came to be called, marked the development of a tentative job analysis technique and its application in the analyses of the cotton textile, petroleum, and automobile industries.

The establishment of 15 research centers in various parts of the country distinguished the second phase of development, beginning in 1935. The cooperation of State Employment Services in the development and application of occupational analysis material was considerably advanced during this period, as was the study of aptitudes and skills.

The outfitting, in 1938, of community research centers to be jointly maintained by the Employment Service and the American Youth Commission distinguished the third phase of development. Cooperative relationships with interested groups were established to *apply* the results of occupational research to the solution of local problems.

Fourth was the phase of *integration*. The release of the Dictionary of Occupational Titles in 1940 led the upward swing in popularity, throughout the Employment Services, of occupational analysis material. Local office personnel received intensive, coordinated *training* in job analysis and the use of the products of occupational research.

Manpower utilization typifies the present phase of the work. In the war period Government agencies and private employers are using occupational analysis materials for the solution of manpower problems, with special emphasis on upgrading, job subdivision, absenteeism and labor turnover, employment of women, and designating essential and critical occupations. Relationships between civilian and military occupational specialties of great usefulness in the interviewing and placement of discharged veterans were established during 1943 and 1944. New testing and selective-placement devices were also developed for the employment counseling of returned servicemen.

From 1934 until 1939, this work was carried on as the Occupational Research Program of the United States Employment Service, under the direction of Dr. Wm. H. Stead. But in the spring of 1939, the President's Reorganization Plan provided for the transfer of all activities of the Employment Service to the Social Security Board. In that agency, the work was carried on in the Occupational Analysis Section, United States Employment Service Division, Bureau of Employment Secu-

rity. Dr. Carroll L. Shartle then became Director, a post which he filled with distinction until October of 1944. Since February 1943, the program has been conducted as the Division of Occupational Analysis and Manning Tables, more recently the Division of Occupational Analysis, Bureau of Manpower Utilization, War Manpower Commission. Mr. Carl A. Heinz is Chief of that Division.

ACTIVITIES OF THE PROGRAM

The Division of Occupational Analysis and its precursors have evolved nine major occupational research activities. Basic among these is the analyses of jobs.

For 11 years the Division has secured its source material as the result of approximately 100,000 separate job analyses. These data have been reported according to a job analysis procedure developed in the Division, and described in the TRAINING AND REFERENCE MANUAL FOR JOB ANALYSIS and the GUIDE FOR ANALYZING JOBS now on sale at the Government Printing Office. Essentially, the job analyst is trained to determine What the Worker Does; How He Does It; Why; and The Skill Involved in the Performance.

Naming, defining, and classifying jobs, the second major activity, is keynoted in the DICTIONARY OF OCCUPATIONAL TITLES described in the following annotated list of publications.

Defining and classifying entry fields of work, an outgrowth of the classification activity, has resulted in the production of Part IV of the DICTIONARY OF OCCUPATIONAL TITLES, also described in the following list.

Fourth activity is the establishment of occupational families. Two job family series have

resulted from this work. They are described in the accompanying list under the headings "Occupational 'O' Series" and "Industrial 'I' Series."

Determining the physical demands of jobs is the fifth of the activities; it has culminated in the preparation of NATIONAL PHYSICAL DEMANDS INFORMATION SERIES, NUMBER ONE, APPRENTICEABLE OCCUPATIONS and PHYSICAL DEMANDS ANALYSIS AND PHYSICAL CAPACITIES APPRAISAL, a manual of the Division of Occupational Analysis. While the last named does not present a complete description of the plan for selective placement of the handicapped, an activity best handled by persons with special training, it does present instructions for obtaining and matching information concerning the physical demands of jobs and the physical capacities of workers.

Sixth activity, the describing of jobs, has resulted in the production of numerous job descriptions which have been published both individually and in volumes relating to specific industries.

Industry composition study, the seventh activity, has resulted in the production of Manning Tables, used in guiding the orderly withdrawal of personnel from industry for military service; Industry Composition Patterns which show the occupations associated with specific industries and the percentage distribution of such occupations; the Personnel Distribution technique for determining the composition of plant labor forces by functional groups; and the Occupational Mobility technique whereby current employment statistics and estimates of future employment in a community or other subdivision may be reduced to meaningful occupational terms.

Developing and using measures of skill, the eighth activity, has resulted, to date, in the installation of oral trade questions for use in 1,204 local offices of the United States Employment Service and of performance trade tests in 410 such offices, where they are used in the selection of qualified workers for referral to jobs. These tests are confidential and cannot be distributed except to personnel of the War Manpower Commission.

Finally, the measurement of occupational aptitudes is accomplished through the use of some 100 test batteries which have been developed to afford, or determined to have, high predictive value in the measurement of factors that bear on success or failure in specific jobs. These tests are also confidential. They are used in local employment offices in the selection of rapid learners for referral to jobs or to training courses.

USES OF OCCUPATIONAL TECHNIQUES

Increasingly, it has become apparent from requests directed to the Division that these products and techniques are applicable throughout the entire field of personnel administration and manpower utilization.

Examples of some of the problems met, at least partially, by job information techniques of the Division are: Provisions for the hiring of women, the aged, and the handicapped for war production jobs; the equitable solution of questions of job classification and hiring requirements; for assisting the orderly movement of workers from peacetime to wartime employment, and back to the peacetime jobs when war production demands slacken; in the

design and conduct of training courses to provide workers for specific jobs; for the counseling and guidance of persons seeking appropriate training and employment; in the conduct of industrial labor relations; to enhance the efficiency of plant safety programs; and in extending special services to physically handicapped job seekers.

Because it is continually adding to and refining the results of its research, the Division of Occupational Analysis of the War Manpower Commission may be able to assist in other activities not here mentioned. The Division will be pleased, therefore, to receive notice of problems in which it may be of help.

Field offices of the War Manpower Commission, also, are equipped to furnish a variety of technical services relating to personnel administration and vocational counseling. Personnel of these offices will be glad to receive inquiries regarding this possibility.

WHERE OCCUPATIONAL INFORMATION PUBLICATIONS MAY BE OBTAINED

It will be necessary to obtain most publications of the Division of Occupational Analysis by purchase from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C. An annotated list of all Division publications follows, below. It is organized in two parts. The first names and describes publications THAT MUST BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE, and specifies the prices. The second lists and describes those publications which, for the present, can be distributed, in limited quantities, without charge, by

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local offices of the United States Employment Service or by the Division of Occupational Analysis, Bureau of Manpower Utilization, War Manpower Commission, Washington 25, D. C.

PART II

Publications on Sale at the Government Printing Office

NOTE.—*Please do not order the publications listed in Part II from the War Manpower Commission as that agency is* ***Unable to Fill Orders For Them.*** *Publications for which prices are indicated* ***Must Be Ordered From The Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.***

1. DICTIONARY OF OCCUPATIONAL TITLES

Published in 4 parts.

Part I: Definitions of titles: 1,287 pages, June 1939	$2.00
Part II: Group Arrangement of Occupational Titles and Codes: 330 pages, June 1939	1.00
Part IV: Entry Occupational Classification: 242 pages, October 1944	.35
Supplement to the DICTIONARY OF OCCUPATIONAL TITLES, Edition II: 525 pages, July 1943	.60

The DICTIONARY OF OCCUPATIONAL TITLES defines and supplies uniform names for basic occupations in agriculture, trades and services,

industry, and professions and crafts. It allocates jobs to groups comprising occupations closely related because of the similar skills, knowledge, and abilities they require; and assigns identifying code numbers to the jobs. The Dictionary is a source of data useful in personnel interviewing and selection, the transfer of workers, classification of jobs, and maintenance of employment records. It permits rapid and precise identification of jobs, and of workers' occupational experience, in standard terminology, and facilitates transactions involving occupational data with such agencies of Government as the United States Employment Service and the War Labor Board.

Part I lists and defines 17,452 jobs which are presented, with their code numbers, in alphabetical order under more than 29,000 titles.

Part II contains definitions for the major occupational groups and divisions, and lists the job titles according to their occupational code numbers.

Edition II of the SUPPLEMENT to the DICTIONARY OF OCCUPATIONAL TITLES is an extension of Parts I and II of the DICTIONARY OF OCCUPATIONAL TITLES and defines more than 4,000 additional basic jobs in war activities.

Part IV offers a classification structure and techniques for classifying individuals with limited work experience who must or who wish to enter fields of work in which they have not had fully qualifying work experience. School training, leisure activities, military training, and personal traits are related to the fields of work described in the entry classifications. Specific occupations from Part I are also related to each field of work and are listed as Entry Occupations (not requiring

previous experience) and Non-entry Occupations (requiring previous experience).

More than 92,000 copies of the DICTIONARY OF OCCUPATIONAL TITLES are now in use by the United States Employment Service, schools, libraries, all branches of the armed forces, Selective Service, and other agencies of Government and industry. Governments of such countries as Canada, Great Britain, Australia, France, Holland, Brazil, Chile, and Russia are also using this most widely consulted American document on occupations.

2. NATIONAL JOB DESCRIPTIONS

Published in 15 major industries.

Describe the work performed, equipment used, and the customary upgrading and transfer job-relationships for occupations in 14 industries. Cover occupations comprising over one-half of the normal industrial activities of the country. Furnish composite descriptions based upon analysis of each job in a number of establishments, and show important variations in the jobs. May help to expedite the development of job analysis programs for individual establishments by providing basic job information thus obviating the necessity for complete analyses.

Provide data for such personnel administration functions as the selection and training of workers, upgrading, the determination of the physical requirements of jobs, or the establishment of a job evaluation system, by showing for each major occupation what the worker does on that job, how he does it, why he does it, and the skill required. Provide vocational counselors with information on industrial processes and key jobs of each industry, working conditions, and usual entry and promotional lines.

BAKERY PRODUCTS INDUSTRY, JOB DESCRIPTIONS FOR THE:

1 volume. June 1939, 322 pp., illus---------- $1.00

Describes occupations concerned with the production of all bakery products except ice cream cones.

CLEANING, DYEING, AND PRESSING INDUSTRY, JOB DESCRIPTIONS FOR THE:

1 volume. October 1938, 374 pp., illus---------- $1.25

Describes occupations in establishments that clean, dye, and press men's and women's garments, hats, and apparel. Some establishments specialize in certain phases of the work, but many perform all of the above services.

CONSTRUCTION INDUSTRY, JOB DESCRIPTIONS FOR THE:

5 volumes. July 1936, 1,539 pp., illus. (in sets only)---------- $5.75

Describes occupations in the construction of highways; buildings; bridges and viaducts; sewers, tunnels, and waterworks; and river and harbor work.

CONFECTIONERY INDUSTRY, JOB DESCRIPTIONS FOR THE:

1 volume. June 1939, 218 pp., illus ---------- $1.25

Describes jobs concerned with the manufacture of hard candies, soft or cream candies,

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and popcorn confections. Does not include jobs in the manufacture of confections made exclusively of chocolate, or the blanching and roasting of nuts.

COTTON TEXTILE INDUSTRY, JOB DESCRIPTIONS FOR THE:

1 volume. June 1939, 323 pp., illus---------- $1.00

Describes occupations concerned with manufacturing cotton yarn from raw cotton and with weaving all-cotton cloth of twelve inches or greater width.

DOMESTIC SERVICE AND PERSONAL SERVICE OCCUPATIONS, JOB DESCRIPTIONS FOR:

1 volume. June 1939, 261 pp---- $1.00

As the title implies, this book consists of two parts.

Part I describes occupations concerned with the rendering of personal services to individuals in and about their homes.

Part II describes occupations found in barber shops, beauty parlors, garment alteration and repair shops, glove repair shops, hosiery repair shops, public baths, shoe shining shops, textile weaving (reweaving) and mending shops, and undertaking establishments; and also describes jobs, such as hat checker, that occur in a large number of establishments, and involve services to or for a person.

GARMENT MANUFACTURING INDUSTRY, JOB DESCRIPTIONS FOR THE:

1 volume. June 1939, 237 pp., illus---------- $1.00

Describes jobs concerned with the manufacture of apparel from woven and knitted

fabrics, except jobs peculiar to the manufacture of knitted garments.

HOTELS AND RESTAURANTS, JOB DESCRIPTIONS FOR:

2 volumes. April 1938, 479 pp., illus. (in sets only)---------- $2.00

Describes occupations in various phases of the hotel and restaurant industry. Includes jobs found in formal dining rooms and cafes, cafeterias, coffee shops, tea rooms, dairy lunches, and automats.

INDUSTRIAL SERVICE AND MAINTENANCE OCCUPATIONS, JOB DESCRIPTIONS FOR:

1 volume. June 1939, 265 pp--- $1.50

Describes occupations concerned with the operation of equipment such as elevators, cranes, and heating and ventilating equipment, and occupations concerned with lubricating, cleaning, adjusting, and minor repair of the premises and mechanical equipment of industrial plants.

JOB FOUNDRIES, JOB DESCRIPTIONS FOR:

1 volume. April 1938, 336 pp., illus---------- $1.25

Describes occupations in job foundries. Covers shops usually fitted to undertake any type of work assigned to them and does not include occupations existing in foundries operating on a production basis.

JOB MACHINE SHOPS, JOB DESCRIPTIONS FOR:

1 volume. April 1938, 196 pp., illus---------- $1.25

Describes occupations in job machine shops. Covers shops fitted to undertake any job assigned to them and does not include occupations found in machine shops operating on a production basis.

LAUNDRY INDUSTRY, JOB DESCRIPTIONS FOR THE:

1 volume. June 1937, 291 pp., illus---------- $1.25

Describes occupations in such commercial laundries as finished-work laundries, family-service laundries, wet-wash laundries, and those existing in hotels and institutions. Since many large laundries offer all these special services, no effort has been made to indicate with what type of laundry practice the specific jobs are identified.

LUMBER AND LUMBER PRODUCTS INDUSTRIES, JOB DESCRIPTIONS FOR THE:

1 volume. June 1939, 347 pp., illus---------- $1.25

Describes general woodworking occupations common to a number of industries, and jobs peculiar to the sawmill, planing mill, and excelsior industries.

OFFICE OCCUPATIONS, JOB DESCRIPTIONS FOR:

1 volume. December 1944, 204 pp ---------- $1.25

Describes occupations concerned with carrying on clerical and related functions in a business or industry. Includes stenographers; typists; bookkeepers; cashiers; checkers; receiving, shipping, and stock clerks; credit and collection clerks; general clerks; office machine operators; personnel clerks; and telephone operators.

RETAIL TRADE, JOB DESCRIPTIONS FOR THE:

3 volumes. April 1938, 743 pp., illus. (in sets only)---------- $3.00

Describes occupations in the various types of retail store establishments, including both department stores and specialty shops.

NOTE.—The stock of the following published job descriptions has been exhausted, Copies are on file in local offices of the United States Employment Service and in many public libraries.

AUTOMOBILE MANUFACTURING INDUSTRY, JOB SPECIFICATIONS FOR THE:

3 volumes. June 1935, 778 pp., illus----------(out of print)

Describes jobs found in the manufacture of automobiles and such other motor vehicles as buses and trucks.

COTTON TEXTILE INDUSTRY, JOB SPECIFICATIONS FOR THE:

1 volume. June 1935, 254 pp., illus----------(out of print)

Describes occupations incident to the manufacture of cotton yarn, thread, and woven cloth.

3. INDIVIDUAL JOB DESCRIPTIONS[1]

Published in pamphlet form for individual occupations.

Describe the work performed, equipment used, training practices, employment variables, and physical demands, of single occupations. Furnish composite descriptions, based upon analyses of the individual job in a number of different establishments, in various industries.

Provide basic data for the selection and training of workers, the development of programs for job subdivision, the establishment of job evaluation systems, and the determination of physical requirements of jobs. Supply information on single occupations for vocational counselors, including a detailed list of industries in which each job has been found to occur.

The following individual job descriptions may be purchased from the Superintendent of Documents, United States Government Printing Office, for 5 cents a copy or $1.50 for 100 identical copies:

Aircraft-Engine Mechanic	5–80. 130
Aircraft Mechanic	5–80. 120
Airplane Coverer	5–03. 010
Bessemer-Converter Blower	5–92. 302
Blast-Furnace Blower	4–91. 311
Boilermaker I	4–83. 100
Coke Burner	4–56. 010
Drop-Hammer Operator IV	4–86. 170
Electric-Refrigerator Serviceman	5–83. 031
Engine Tester	5–80. 350
Fabric Worker	5–03. 030
First Helper II	4–91. 445

[1] See also pages 26 through 29 for titles of other individual Job Descriptions that can be obtained free of charge from the War Manpower Commission.

Form Builder I	5–17. 060
Gas-Refrigerator Serviceman	5–83. 032
Glazier II	5–77. 010
Heater III	4–88. 081
Instrument Man IV	5–83. 972
Landing-Gear Assembler	5–03. 554
Lay-Out Man I (aircraft mfg.)	4–80. 022
Mock-Up Assembler	5–17. 240
Patternmaker XI	5–17. 248
Pipe Fitter I	5–30. 010
Plexiglas Former	5–77. 040
Propeller-Installation Assembler	5–03. 562
Sheet-Metal Worker, Aircraft II	4–80. 060
Spinner IV	4–94. 201
Tool Maker	4–76. 210

4. JOB FAMILIES[2]

Available in two series.

List groups of occupations which are related to selected base occupations, or to key occupations in selected industries. These relationships may be established because of similarities in the work performed; the methods by which the work is accomplished; the tools, equipment, materials, and work-aids utilized; the mental and physical worker-characteristics required for successful job performance; or significant combinations of these factors. Job Families supply two kinds of assistance in personnel recruitment, selection, counseling, training, or transfer of workers. First, they identify the kinds of workers that may be used efficiently and with a minimum of retraining to fill specific jobs; and, second,

[2] See also pages 36 through 39 for the titles of other Job Families that can be obtained free of charge, in limited quantities, from the War Manpower Commission.

they identify the kinds of jobs in which workers can be most efficiently employed with fullest utilization of their skills when work in which they have had experience and training is not available. Two series of Job Families have been prepared. *The Occupational "O" Series* lists job-groups which constitute good sources of workers to fill specified base occupations. Occupational job families of this type prepared for Army occupations are designated by the code letter "A". *The Industrial "I" Series* includes two kinds. One kind lists job-groups from each of which a specified key job in a particular industry can be filled; and the other lists job-groups in specified industries from each of which workers can effectively be upgraded or transferred to a specified key job in the same industry. Illustrative of the nature and content of typical job families in the "O" and "I" series are the following examples:

Job Family No. O–3, Occupations Related to Engine-Lathe Operator I: Lists 15 groups of related occupations and describes the basis for their relations to ENGINE-LATHE OPERATOR I.

Job Family No. O–84, Occupations Related to Basic Occupations in Synthetic Rubber-Monomer Production: Lists 9 groups of related occupations and describes their relationship to a group of catalytic conversion occupations and a group of distilling occupations in the production of rubber monomers. Also lists the physical demands and working conditions usually found in each occupation in the job family.

Job Family No. I–50, Occupations Related to Occupations in Aluminum Production: Lists groups of related occupations

for 73 occupations involved in the extraction of alumina and the reduction of aluminum from alumina.

Job Family No. I–52, Upgrading, and Intra-Industry Transfer Suggestions for Occupations in the Manufacture of Radio Equipment, Parts, and Tubes: Lists sources of upgrading and inter-department transfer for 186 occupations in the manufacturing of all parts of civilian and military radios, including tubes.

OCCUPATIONAL ("O") SERIES

Job Families for Occupations

Aircraft Mechanic, O–89	$0.10
Airplane Woodworker, O–32	.05
Boilermaker, O–12	.10
Clock and Watch Repairmen, O–88	.10
Drop-Hammer Operator, O–39	.05
Electric-Arc-Furnace Operator, O–38	.05
Electrician, Ship, O–34	.05
Engine-Lathe Operator, O–3	.10
Heat Treater, All-Round, O–37	.10
Hydraulic-Control and Fuel-and-Oil Units Assemblers, O–47	.05
Mechanical Draftsmen, O–23	.05
Mechanical Inspectors, O–50	.05
Milk Processing Occupations, All-Round, O–87	.10
Miners, All-Round, O–86	.15
Patternmaker, Wood, O–13	.10
Power-Shovel Operator, O–9	.05
Screw-Machine Operator, Automatic, O–31	.10
Stonemason, O–28	.05
Synthetic-Rubber Monomer Occupations, O–84	.10

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INDUSTRIAL ("I") SERIES

Airframe Industry (related jobs), I–65 (supersedes I–21) $0.20
Airframe Manufacturing (upgrading suggestions), I–40 ..... .35
Aluminum Production (related jobs), I–50 ..... .15
Aluminum Production (upgrading suggestions), I–58 ..... .10
Ammunition Manufacturing, I–51 ..... .15
Automobile Manufacturing, I–29 (supersedes I–4) ..... .20
Boilermaking, I–6 ..... .10
Boot and Shoe Manufacturing, I–18 ..... .20
Building Construction, I–15 ..... .20
Cane-Sugar Refining, I–41 ..... .15
Canning and Preserving Industry (related) I–71 ..... .15
Dress Manufacturing, I–70 (supersedes I–25) ..... .10
Drug Preparations and Related Products, I–43 ..... .10
Electrical Equipment Industry, I–60 ..... .15
Fiber and Paper Container Manufacturing, I–37 ..... .10
Foundry Industry, I–64 ..... .10
Fur Goods Manufacturing, I–23 ..... .10
Furniture Manufacturing, Metal, I–48 ..... .10
Glue and Gelatin Manufacturing, I–46 ..... .15
Hat Manufacturing, I–26 ..... .20
Jewelry Manufacturing, I–44 ..... .10
Leather Products Manufacturing, I–32 ..... .15
Locomotive and Car Building and Repair, I–49 ..... .15
Logging and Sawmill (related jobs), I–45 ..... .10
Logging and Sawmill (upgrading suggestions), I–59 ..... .10

Machine Tool Manufacturing (upgrading suggestions), I–38 ..... $0.10
Magnesium Production (related jobs), I–53 ..... .10
Magnesium Production (upgrading suggestions), I–54 ..... .10
Paper and Pulp Production, I–69 (supersedes I–27) ..... .10
Precision Instrument Manufacturing, I–61 ..... .20
Printing and Publishing, I–22 ..... .20
Quarrying, I–10 ..... .10
Radio Equipment, Parts, and Tube Manufacturing (upgrading suggestions), I–52 ..... .15
Radio Manufacturing (related jobs), I–8 ..... .10
Refrigerator and Refrigerating and Ice-Making Equipment Manufacturing, I–5 ..... .15
Shipbuilding (upgrading suggestions), I–42 ..... .25
Slaughtering and Meat Packing Industry, I–63 ..... .15
Structural and Ornamental Metal Work, I–30 ..... .10
Textile Printing, I–28 ..... .10
Textiles and Knit Goods, Except Hosiery, Silk, I–47 ..... .10
Rubber Products Manufacturing, I–14 ..... .10
Ship and Boat Building and Repair, I–62 (supersedes I–20) ..... .15
Veneer and Plywood Manufacture, I–66 ..... .10
Wooden Box Manufacturing, I–39 ..... .15
Woodworking, General, I–24 ..... .20
Woolen and Worsted Manufacturing, I–36 ..... .20

5. MISCELLANEOUS PUBLICATIONS

TRAINING AND REFERENCE MANUAL FOR JOB ANALYSIS

September 1944. 104 pp------ $0.20

An operational and reference manual for job analysis. Job analysis is not limited to any one specific application, but is designed for general utilization in any type of program requiring information about jobs.

GUIDE FOR ANALYZING JOBS

January 1944, 40 pp---------- $0.10

A pocket-size guide to analysis procedures developed as a companion volume to the TRAINING AND REFERENCE MANUAL FOR JOB ANALYSIS. Designed as a work book, it contains basic principles of job analysis in outline form, with an explanation of each job analysis component. Job analysis considerations applying to a wide variety of jobs are listed.

INDUSTRIAL JOB EVALUATION SYSTEMS

August 1943. 28 pp---------- $0.10

An introduction to job evaluation. The subject is presented through a summarization of job evaluation principles. The relationship of job evaluation procedures to occupational information is discussed. A bibliography to specific aspects of job evaluation is included.

PHYSICAL DEMANDS ANALYSIS AND PHYSICAL CAPACITIES APPRAISAL

In press, available about September 15, 1945.

A manual describing the concepts of the physical demands and capacities technique and presenting instructions for the preparation

and matching of physical demands and capacities information. Does not present a complete description of the selective placement process.

NATIONAL PHYSICAL DEMANDS INFORMATION SERIES—NUMBER I, APPRENTICEABLE OCCUPATIONS

In press, available about September 15, 1945.

Offers general physical demands information and composite descriptions of the physical demands usually associated with the most common apprenticeable occupations. Because the physical demands of specific jobs frequently vary, this general information should be verified for each job before it is used in the placement process. Accordingly, the information is presented in such a way that it can be verified readily.

SELECTIVE PLACEMENT FOR THE HANDICAPPED (Revised February 1945)

In press, available about August 15, 1945.

Explains, describes, and defines the United States Employment Service selective placement program for applicants who are physically handicapped, emotionally handicapped, or mentally retarded. The first part of the handbook outlines local-office operations and responsibilities in respect to the handicapped, laws affecting the handicapped, and cooperative relations with other agencies serving the handicapped. It also outlines the technique for matching the physical capacities of handicapped applicants with the physical requirements of jobs.

The second part briefly describes occupationally significant factors of a number of

common disabilities, and the evaluation of these disabilities in terms of physical capacities.

The third part, PHYSICAL DEMANDS ANALYSIS AND PHYSICAL CAPACITIES APPRAISAL, has been reprinted as a separate manual which is described elsewhere in this booklet.

SPECIAL AIDS FOR PLACING MILITARY PERSONNEL IN CIVILIAN JOBS

Published in two volumes applicable to reemployment problems of Navy Personnel and Army Enlisted Personnel.

Provide information of a kind not elsewhere found, which will facilitate the maximum utilization of experience gained in military life for related civilian employment. Permits the assignment of servicemen to suitable civilian work with full consideration of limitations imposed by physical impairments.

Lists Navy occupations and Army Military Occupational Specialties with equivalent codes and titles from the DICTIONARY OF OCCUPATIONAL TITLES when equivalence can be established. States the qualifications for specific civilian employment acquired through military experience in each of the Service occupations and supplies a list of civilian occupations related to each military job. These qualifications are expressed in terms of specific knowledge, skills, and abilities; and familiarity with machines, processes and equipment. The publications also summarize the additional civilian training required for effective transfers from the military occupations to each group of related civilian occupations. Also, lists and defines the principal physical activities associated with the work of each civilian occupational group and describes the significant factors

affecting the working conditions encountered by workers in each civilian job group.

SPECIAL AIDS FOR PLACING MILITARY PERSONNEL IN CIVILIAN JOBS (ENLISTED NAVAL PERSONNEL)

In press, not yet priced.

SPECIAL AIDS FOR PLACING MILITARY PERSONNEL IN CIVILIAN JOBS (ENLISTED ARMY PERSONNEL)

March 1944, 490 pp---------- $1. 00

PART III

Free Publications Available in Limited Quantities From the War Manpower Commission, Washington 25, D. C.

NOTE.—*All other publications of the Division of Occupational Analysis must be ordered directly from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Publications listed below are the only ones that can be supplied from the War Manpower Commission. For the present, they can be distributed in limited quantities without charge, by local offices of the U. S. E. S. or by the Division of Occupational Analysis, War Manpower Commission, Washington 25, D. C.*

1. JOB DESCRIPTIONS

Published in pamphlet form for individual occupations.

Individual Job Descriptions are described on page 16.

INDIVIDUAL JOB DESCRIPTIONS [3]

Airplane Woodworker I	4–33. 916
Armature Winder I	6–99. 011
Armature Winder II	6–99. 011
Baker I	4–01. 100
Bending-Roll Operator	4–88. 742
Blacksmith II	4–86. 010
Boatbuilder, Wood	5–25. 610
Boilermaker, Loftsman	5–17. 350
Bolter and Reamer	6–84. 160
Bookbinder	4–49. 010
Boring-Mill Operator	4–78. 041
Bricklayer II	5–24. 010
Bucker-Up III	6–84. 410
Cabinetmaker I	4–32. 100
Cable-Hanger Man	7–05. 620
Canvas Worker II	4–27. 811
Carpenter I	5–25. 110
Carpenter, Fairing	5–25. 640
Carpenter, Ship	5–25. 640
Carver, Hand I	4–33. 361
Chipper III	4–78. 920
Chipper, Metal	6–78. 925
Clothes Designer	0–46. 01
Compositor I	4–44. 010
Cooper II	4–38. 010
Coppersmith II	4–80. 080
Coremaker I	4–82. 010
Crane Rigger	5–88. 030
Cylindrical-Grinder Operator I	4–78. 511
Die Maker II	4–76. 010
Diver	5–89. 011
Dock Master	5–92. 422
Driller VI	6–84. 150
Drop-Hammer Operator II	4–86. 110

[3] See also pages 16 through 17 for the titles of other individual Job Descriptions that must be purchased at the indicated prices from the Superintendent of Documents, U. S. Government Printing Office.

Electrician, Airplane I	4–97. 910
Electrician, Ship	4–97. 210
Electrician, Shop	4–97. 220
Engine-Lathe Operator I	4–78. 011
Flame-Cutter Operator	6–85. 215
Flange-Facing-Machine Operator	6–78. 293
Flanging-Press Operator	6–88. 742
Floor Assembler	6–78. 632
Four-Column-Hydraulic-Press Operator	4–86. 130
Furnace Tender, Coke or Coal	4–91. 571
Furnace Tender, Oil or Gas	4–91. 571
Furnaceman XII	4–86. 020
Furrier II	4–21. 010
Gear-Hobber Operator I	4–78. 132
Grating Installer	4–84. 085
Hammersmith	4–86. 120
Hangerman	5–30. 020
Heat Treater II	4–87. 010
Heater, Forge	6–88. 732
Horizontal-Boring-and-Milling-Machine Operator	4–78. 042
Hot Bender III	4–95. 051
Inspector (mach. shop)	4–78. 671
Internal-Grinder Operator	4–78. 512
Jig-Boring-Machine Operator	4–78. 043
Joiner VI	5–25. 650
Lay-Out Man (boilermaking)	4–83. 200
Lay-Out Man (mach. shop)	4–75. 140
Lay-Out Man (ship & boat bldg. & rep.)	5–05. 530
Lay-Out Man (woodworking)	4–33. 912
Loftsman II	5–17. 210
Machinist II	4–75. 010
Machinist, Outside	4–75. 150
Mangle-Roll Operator	6–88. 733
Miller III	4–07. 100
Milling-Machine Operator II	4–78. 031
Millman	4–33. 914

Millwright ---------- 5–78. 100
Molder, Bench ---------- 4–81. 010
Molder, Finish ---------- 4–81. 020
Molder, Floor ---------- 4–81. 030
Oxygen-Plant Operator ---------- 4–52. 735
Packer (ship & boat bldg. & rep.) -- 7–05. 510
Painter I ---------- 5–27. 010
Paperhanger II ---------- 5–28. 100
Patternmaker, Metal ---------- 5–17. 010
Patternmaker, Wood ---------- 5–17. 020
Pipe Assemblyman ---------- 5–30. 030
Pipe Bender, Machine ---------- 6–95. 056
Pipe Coverer II ---------- 5–33. 110
Pipe Fitter II ---------- 5–30. 015
Pipe Tester ---------- 6–78. 671
Planer Operator II ---------- 4–78. 071
Planer Operator IV ---------- 4–33. 461
Plaster-Pattern Caster ---------- 5–17. 250
Plate-Edge-Planer Operator ------ 6–78. 071
Plater I ---------- 4–74. 010
Plumber I ---------- 5–30. 210
Plumber II ---------- 5–30. 260
Plumber, Aircraft ---------- 5–03. 562
Power-Shear Operator I ---------- 6–88. 664
Punch-Press Operator II --------- 6–88. 623
Radford Straightener ---------- 5–05. 620
Railroad-Car Inspector ---------- 5–76. 020
Reverberatory-Furnace Operator -- 4–91. 441
Ripshear Operator ---------- 6–88. 667
Rivet Heater ---------- 6–84. 430
Router Operator I ---------- 4–33. 411
Scaffold Builder, Wooden -------- 5–25. 230
Shaper Operator I ---------- 4–78. 061
Sheet-Metal Installer ---------- 4–88. 622
Sheet-Metal Lay-Out Man I ------- 4–80. 020
Sheet-Metal Worker II ---------- 4–80. 010
Sheet-Metal Worker III ---------- 4–88. 622
Shipfitter ---------- 4–84. 012
Ship Rigger ---------- 5–05. 570

Steel Erector II ---------- 6–84. 115
Straightener V ---------- 5–05. 620
Surface-Grinder Operator -------- 4–78. 513
Tailor I ---------- 4–26. 101
Tank Tester I ---------- 4–84. 110
Tanner ---------- 4–59. 501
Template Maker, Wire ---------- 5–17. 260
Tilting-Furnace Operator -------- 4–91. 572
Tool Designer ---------- 0–48. 41
Tool-Grinder Operator ---------- 5–84. 110
Turret-Lathe Operator ---------- 4–78. 021
Unionmelt Operator ---------- 4–85. 080
Upholsterer II ---------- 4–35. 720
Vertical-Turret-Lathe Operator ---- 4–78. 022
Watchmaker ---------- 4–71. 510
Welder, Acetylene ---------- 4–85. 030
Welder, Arc ---------- 4–85. 020
Welder, Combination ---------- 4–85. 040
Welder, Spot ---------- 6–85. 060
Welder, Tack ---------- 6–85. 080
Welding Tester I ---------- 4–85. 020
Wood Calker I ---------- 5–05. 610
Wood Calker II ---------- 5–05. 610

2. INTERVIEWING AIDS

Published on cards.

Provide basic information on the significant variations in the work performed in individual occupations, with particular emphasis on differences in what the worker does, how he does it, why, and the skills required.

Use in the selection and training of workers to perform the elements of a job as it occurs in a specific plant.

PUBLISHED INTERVIEWING AIDS

Annealer ---------- 6–87. 110
Artificial-Limb Assembler -------- 5–09. 420

Artificial-Limb Maker II 5–09. 430
Auditor 0–01. 60
Automobile-Body Repairman, Metal 5–81. 510
Automobile-Generator Repairman 5–81. 410
Automobile Mechanic 5–81. 010
Automobile Mechanic, Motor I 5–81. 610
Automobile-Radiator Man 5–81. 530
Band-Ripsaw Operator 6–33. 211
Band-Sawing-Machine Operator 6–78. 611
Band-Scroll-Saw Operator 6–33. 212
Barrel Chamberer ..... [4] 6–78. 025
Barrel Reamer 4–78. 211
Barrel Rifler I 4–78. 214
Barrel Straightener 4–93. 772
Beamer III 4–19. 201
Bed Laster 4–61. 681
Bench Grinder 6–77. 710
Blaster I 5–74. 020
Boarding-Machine Operator 6–14. 173
Boiler-Shop Mechanic 4–83. 400
Boiler Tester 6–83. 130
Bookkeeper II 1–01. 02
Bookkeeper III 1–01. 03
Bookkeeping-Machine Operator I 1–02. 01
Bookkeeping-Machine Operator II 1–02. 02
Bookkeeping-Machine Operator III 1–02. 03
Boring-Machine Operator, Automatic 6–78. 041
Boring-Machine Operator, Multiple Spindle 6–33. 412
Brake Operator, Hand 6–94. 206
Brake Operator, Machine II 6–94. 207
Bricklayer I 5–24. 110
Bricklayer II 5–24. 010
Bricklayer, Refractory Brick 5–24. 130
Bricklayer, Sewer 5–24. 020
Broaching-Machine Operator 6–78. 051

[4] Formerly 4–78. 212.

Buffer I 6–77. 020
Bulldozer Operator I 7–23. 030
Bumper Operator I 6–94. 221
Cabinetmaker I 4–32. 100
Calculating-Machine Operator 1–25. 13
Card Grinder 6–18. 220
Carpenter I 5–25. 110
Carpenter, Finish 5–25. 150
Carpenter, Maintenance 5–25. 830
Carpenter, Rough II 5–25. 230
Cashier I 1–01. 52
Cashier II 1–01. 53
Casting Inspector 6–82. 920
Caterpillar-Crane Operator 5–73. 050
Cement Finisher II 5–26. 100
Centerless-Grinder Operator 6–78. 511
Charging-Machine Operator I 6–91. 181
Chassis Assembler II 6–98. 010
Check Inspector 6–98. 030
Chipper, Foundry 6–82. 910
Coal-Pulverizer Operator 7–54. 712
Cobbler, Sole 4–61. 171
Cobbler, Upper 4–61. 172
Compositor I 4–44. 010
Cook V 2–26. 32
Cook VI 4–09. 212
Core-Oven Tender 6–82. 120
Core Paster 6–82. 060
Cotton Classer 5–76. 110
Cupola Charger I 6–91. 051
Cupola Charger II 6–91. 052
Cupola Tender 4–91. 351
Cutter, Machine I 6–27. 054
Cyanide-Furnace Operator 6–87. 210
Cylinder-Press Feeder 6–49. 410
Cylinder-Press Man 4–48. 010
Detail Assembler I 7–03. 542
Detail-Electrical Assembler 7–00. 938
Diamond Driller 5–75. 410

Die Cleaner and Polisher---------- 4-76. 030
Die Setter I---------- 4-76. 120
Disk-Grinder Operator---------- 6-78. 512
Do-All-Saw Operator---------- 6-78. 610
Driller, Machine II---------- 5-75. 020
Drop-Hammer Operator I---------- 6-86. 110
Electric-Bridge-Crane Operator ---- 5-73. 040
Electric-Gantry-Crane Operator---- 5-73. 040
Electric-Monorail-Crane Operator- 5-73. 020
Electrical Inspector II---------- 4-97. 930
Electrical Repairman I---------- 4-97. 420
Electrician I---------- 4-97. 010
Engineer V---------- 0-88. 24
Engineer, Chief, Marine---------- 0-88. 21
Farm Hand, Berry---------- 3-15. 01
Farm Hand, Cotton ---------- 3-12. 10
Farm Hand, Dairy---------- 3-14. 10
Farm Hand, Fruit ---------- 3-15. 21
Farm Hand, General---------- 3-16. 10
Farm Hand, Grain---------- 3-11. 10
Farm Hand, Livestock---------- 3-17. 10
Farm Hand, Poultry ---------- 3-18. 10
Farm Hand, Sugar Beet---------- 3-13. 01
Farm Hand, Tobacco---------- 3-13. 51
Farm Hand, Vegetable---------- 3-19. 10
Farm Mechanic---------- 3-35. 10
Finisher (furn.)---------- 5-16. 710
Fireman, Stationary Boiler-------- 7-70. 040
Fit-Up Man---------- 4-83. 300
Flame-Annealing-Machine Adjuster---------- 6-87. 142
Flame-Cutting-Machine Operator-- 6-85. 240
Folding-Machine Operator VII---- 6-94. 208
Forging-Press Operator I---------- 4-86. 125
Forming-Machine Operator IV---- 6-94. 215
Friction-Sawing-Machine Operator- 6-78. 613
Furnaceman VIII---------- 6-88. 081
Furnace Tender, Heat Treating--- 6-87. 410
Furniture Assembler---------- 6-36. 050

Galvanizer ---------- 6-74. 110
Gas-Producer Man---------- 6-56. 010
Gear-Generator Operator I-------- 4-78. 131
Gear-Generator Operator II------ 6-78. 133
Gear-Hobber Operator II---------- 6-78. 134
Gear-Milling-Machine Operator I-- 4-78. 133
Gear-Milling-Machine Operator II- 6-78. 135
Gear-Shaper Operator I---------- 4-78. 134
Gear-Shaper Operator II---------- 6-78. 136
Greaser III---------- 7-85. 010
Hardener II---------- 4-87. 220
Hardness Inspector---------- 4-87. 910
Hardwood-Floor Layer---------- 5-25. 160
Hoisting Engineer II---------- 5-73. 520
Hoistman I---------- 5-73. 510
Honing-Machine Operator-------- 4-78. 411
Hot-Mill Engineer---------- 5-72. 050
Inspector I (ammunition)-------- 6-54. 038
Inspector (boot and shoe)-------- 4-61. 861
Job Setter II---------- 4-75. 160
Jointer Operator III---------- 6-33. 462
Joggle-Press Operator I---------- 4-88. 624
Lapping-Machine Operator I------ 6-78. 413
Leacher II---------- 6-90. 712
Leather Worker II---------- 6-62. 160
Lens Grinder---------- 5-08. 070
Lineman IV---------- 5-53. 420
Locomotive-Crane Operator------ 5-73. 060
Loftsman III---------- 5-17. 245
Loom Changer---------- 4-15. 030
Loom Fixer---------- 4-16. 010
Machine Adjuster III---------- 7-83. 326
Machine Fixer III---------- 5-83. 324
Machine Molder, Jarring---------- 6-81. 010
Machine Molder, Squeeze-------- 4-81. 050
Machine Molder, Stripping Plate-- 6-81. 020
Maintenance Man, Factory or Mill- 5-83. 621
Milling-Machine Operator, Automatic---------- 6-78. 031

Miner I ---------- 5–21. 010
Miner IV ---------- 7–32. 371
Molder, Finish ---------- 4–81. 020
Molder Helper III ---------- 6–82. 950
Molder Operator III ---------- 6–33. 464
Multiple-Spindle-Drill-Press Operator ---------- 6–78. 081
Offset-Press Man ---------- 4–48. 050
Paint-Touch-Up Man ---------- 7–16. 550
Painter I ---------- 5–27. 010
Painter, Spray I ---------- 7–16. 210
Pattern Cutter II ---------- 4–27. 431
Patternmaker IV ---------- 4–27. 432
Pellet-Press Operator I ---------- 6–54. 020
Pipe-Threading-Machine Operator ---------- 6–95. 058
Platen-Press Feeder I ---------- 6–49. 420
Platen-Press Feeder II ---------- 6–49. 430
Plater I ---------- 4–74. 010
Polisher II ---------- 6–77. 060
Power-Shovel Operator ---------- 5–73. 210
Profiling-Machine Operator II ---------- 6–78. 111
Profiling-Machine Operator III ---------- 6–78. 112
Pulpit-man II ---------- 4–88. 012
Pumpman I ---------- 7–72. 510
Quenching-Machine Operator ---------- 6–87. 220
Radial-Drill-Press Operator ---------- 6–78. 082
Radial-Router Operator ---------- 6–94. 226
Refrigerating Engineer ---------- 5–72. 310
Riveter, Aircraft ---------- 6–95. 080
Riveter, Pneumatic II ---------- 4–84. 060
Roll Polisher ---------- 4–88. 291
Roller I ---------- 4–88. 021
Roller Operator V ---------- 6–88. 024
Rotary-Shear Operator II ---------- 6–94. 204
Router Operator III ---------- 6–94. 227
Sandblast-or-Shotblast-Tumbler Operator ---------- 6–82. 710
Screw-Machine Operator, Automatic I ---------- 6–78. 145

Screw-Machine Operator, Semiautomatic ---------- 6–78. 144
Shaper Operator II ---------- 6–33. 364
Sheet-Aluminum Inspector ---------- 6–88. 215
Sheet-Metal-Fabricating-Machine Operator ---------- 6–94. 202
Sheet-Metal Inspector I ---------- 5–03. 820
Sheet-Metal Inspector II ---------- 6–78. 676
Sheet-Metal Lay-Out Man II ---------- 6–94. 222
Sheet Roller I ---------- 5–92. 301
Sheet Roller II ---------- 4–88. 025
Shell Inspector ---------- 6–78. 673
Shipping Clerk I ---------- 1–34. 13
Single-Spindle-Drill-Press Operator ---------- 6–78. 083
Solderer I ---------- 6–95. 001
Solvent-Recovery Man ---------- 6–52. 446
Speed-Lathe Operator ---------- 4–78. 012
Stationary Engineer ---------- 5–72. 010
Steel-Plate Calker ---------- 6–84. 910
Stereotyper ---------- 4–45. 210
Stonemason ---------- 5–24. 210
Striper, Hand I ---------- 7–16. 610
Structural-Steel Worker ---------- 4–84. 010
Subassembler I ---------- 7–02. 321
Tableman III ---------- 6–88. 036
Tanner ---------- 4–59. 501
Temperer V ---------- 4–87. 310
Thread-Milling-Machine Operator ---------- 6–78. 143
Timberman I ---------- 5–22. 010
Timberman II ---------- 5–25. 260
Tin Roller, Hot Mill ---------- 4–88. 023
Tool Inspector ---------- 4–76. 220
Tool Maker ---------- 4–76. 210
Tractor Operator ---------- 7–36. 510
Trimming-Press Operator II ---------- 6–88. 717
Tube-Bending-Machine Operator I ---------- 6–95. 053
Upholsterer II ---------- 4–35. 720
Upholstery-and-Trim Cutter ---------- 6–27. 060

Wax Impregnator	6–98.260
Weaver IV	4–15.020
Welder, Bar	6–85.010
Welder, Butt	6–85.020
Welder, Flash	6–85.030
Welder, Roller Seam	6–85.100
Welder, Thermite	6–85.070
Wood Turner	4–33.363
Yardmaster I	5–99.010

3. JOB FAMILIES

Available in 2 Series which are described on pages 17 through 19.

OCCUPATIONAL ("O") SERIES

Job Families for Occupations

Aircraft-Engine Mechanic, O–68.
Aircraft-Instrument Mechanic, O–80.
Armorer, O–49.
Assemblers, Heavy Work, O–25.
Automobile Mechanics, All-Round, O–77.
Barrel Straightener, O–33.
Blacksmith and Tool Dresser, O–36.
Boatbuilder, Wood, O–35.
Bricklayers, O–26.
Cabinetmaker I, O–59.
Carpenter, Ship, O–62.
Crane Rigger, O–73.
Die Setter, O–40.
Electric-Motor Repairman, O–48.
Electrician, Airplane, O–41.
Electroplater, O–30.
Forming-Press Operator II, O–58.
Foundry Molders, and Coremakers, Hand, O–76.
Heavy Fabric Workers, All-Round, O–72.
Hosiery Knitters, Full-Fashioned, O–22.

Inspectors, Small-Arms Ammunition, O–55.
Instrument Maker II, O–53.
Job Setter II, O–43.
Locomotive Engineers, Steam, O–85.
Loftsman II, O–4.
Machine Adjuster, Primer Assembly, O–51.
Machine Operators, Small-Arms Ammunition, O–57.
Machinist II, O–11.
Machinist, Bench, O–67.
Machinist, Marine, O–54.
Machinist, Marine Gas-Engine, O–42.
Major Assemblers, Aircraft, O–66.
Marine Engineers, O–82.
Metal Chippers and Calkers, Pneumatic Hammer, O–52.
Milling-Machine Operator II, O–75.
Millwright, O–78.
Painter I, O–65.
Pipe Fitter, Marine, O–45.
Plaster Patternmaker, All-Round, O–64.
Plexiglas Former, O–79.
Pneumatic Riveters, Aircraft, O–71.
Precision-Lens Grinder, O–1.
Radio Mechanic, O–70.
Roller, O–20.
Sheet-Metal Lay-Out Man, O–63.
Sheet-Metal Workers, All-Round, O–81.
Shipfitter, O–10.
Ship Rigger, O–60.
Still Operator, Chemicals, O–69.
Stone Carver, O–17.
Tool, Die, Fixture, Gage, and Jig Makers, O–46.
Tool-Grinder Operator, O–44.
Tool or Machine Designers, O–29.
Tractor Operator, O–8.
Weavers, O–56.

Welder, Acetylene, O–83.
Welder, Arc, O–74.

Job Families for Army Occupations

Aerial Engineer, A–9.
Aerial Gunner, A–8.
Artillery Mechanic, A–18.
Baker, All-Round, A–10.
Bombardier, A–6.
Camoufleur, A–20.
Communications Sergeant, A–5.
Cook, All-Round, A–11.
Crew Chief, Balloon, A–7.
Navigation Clerk, A–12.
Parachute Rigger, A–13.
Photographers, Military, A–21.
Propeller Repairman, A–3.
Range Sergeant, A–15.
Reclamation Man, A–14.
Truck Driver, Army, A–16.
Vocational Examiner, A–17.

INDUSTRIAL ("I") SERIES

Job Families for Industries

Aluminum Ware Manufacturing, I–17.
Glass and Glass Products Manufacturing, I–16.
Heating Equipment Manufacturing, I–33.
Iron and Steel (related occupations in other industries), I–34.
Iron and Steel (upgrading suggestions), I–31.
Miscellaneous Manufacturing Activities, I–56, including:
- Amusement Machine Manufacturing
- Decorative Feather and Artificial Flower Fabrication
- Mirror and Picture Frame Manufacturing
- Musical Instrument Manufacturing
- Sign and Advertising Display Manufacturing
- Toy and Game Manufacturing

Silverware Manufacturing, I–9.
Stoneworking, I–12.
Textile Goods, and Fabric Products Manufacturing, Miscellaneous, I–57, including:
- Carpets, Rugs, and Pads
- Curtains, Draperies, and Bedspreads
- Fancy Fabrics such as Lace and Lace Goods
- Pleating, Stitching, Tucking, and Embroidery
- Trimmings and Art Needlework

Tin Can and Tinware Manufacturing, I–35.

4. INDUSTRY COMPOSITION PATTERNS (OR INDUSTRY MANNING TABLES)

Provide information on the occupations found in single industries, the percentage distribution of workers in these occupations, the distribution of workers according to training time required to reach normal production, and the industry's practices in respect to manpower utilization.

Used in evaluating a plant's occupational distribution, training program, and utilization practices. During the reconversion period these tables can be used in planning the transfer of workers to a new industry and in recruiting additional workers; provide vocational counselors with integrated information concerning the occupational composition and usual manpower practices of an industry; and assist in guiding workers into the fields of greatest opportunity.

COMPLETED COMPOSITION PATTERNS (OR INDUSTRY MANNING TABLES)

Aircraft Parts
Ball and Roller Bearings

Bituminous Coal
Communications Equipment
Cotton Textiles
Fabricated Plastic Products
Forgings
Gray Iron Jobbing Foundries
Machine Tool Accessories
Motor Truck Transportation
Nonferrous Die Casting
Nonferrous Metal Foundries
Pulp, Paper, and Paper Products
Ship Repair and Conversion Yards
Southern Sawmills

U. S. GOVERNMENT PRINTING OFFICE: 1945

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END OF
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